

What We Claim Is:

1. A lawnmower convertible between a bagging mode and a mulching mode, the convertible lawnmower comprising:

a cutter housing having a discharge opening;

an engine mount centrally positioned on the cutter housing;

5 a prime mover supported on the engine mount;

a rotary mulching blade coupled to the prime mover to rotate in a cutting plane about a rotation axis within the cutter housing;

a cover movably mounted within the cutter housing in a plane parallel to the cutting plane and between a full bagging position where the discharge opening is unobstructed by the

10 cover and a full mulching position where the cover obstructs the discharge opening; and

a fin extending from the cover toward the cutting plane.

2. The convertible lawnmower according to claim 1; further comprising at least one position intermediate the full bagging position and the full mulching position where the cover partially obstructs the discharge opening.

3. The convertible lawnmower according to claim 1, wherein the cover includes:

a plurality of shutters extending substantially parallel to the cutting plane, the plurality of shutters stacked in a direction parallel to the rotation axis and slidable laterally relative to one another, each of the plurality of shutters including:

5 a first end; and

a second end;

a pivot connecting the first ends of the plurality of shutters to the cutter housing; and

a support spaced from and secured to the cutting surface;

10 wherein the second ends of the plurality of shutters are slidable along the support between a collapsed position where the plurality of shutters overlie one another, an intermediate position where the plurality of shutters partially overlap one another, and an extended position where the plurality of shutters extend laterally from one another.

4. The convertible lawnmower according to claim 3, wherein the fin extends from one of the plurality of shutters, the fin including:

a first end adjacent to the pivot; and

a second end including a slot extending toward the first end of the fin;

wherein the support extends into the slot.

5. The convertible lawnmower according to claim 4, wherein the cutter housing includes:
an inner scroll centered about the engine mount; and
an outer scroll centered about the inner scroll and the discharge opening being in the outer scroll;

the fin extending from one of the plurality of shutters toward the cutting plane and arcuately in an direction substantially parallel to the cutting plane and the first end of the fin being adjacent the junction of the roof and the outer scroll.

6. The convertible lawnmower according to claim 4, wherein the second end of the fin is movable between a first position adjacent the inner scroll when the plurality of shutters are in the collapsed position, a second position adjacent the outer scroll when the plurality of shutters are in the extended position, and at least one position intermediate the first position and the second position when the plurality of shutters are in the intermediate position.

7. The convertible lawnmower according to claim 4, wherein the inner scroll includes a recess aligned with the fin and the one shutter, the fin and the one shutter received in the recess when the one shutter is the collapsed position.

8. The convertible lawnmower according to claim 4, wherein the support spans from the outer scroll to the inner scroll;

9. The convertible lawnmower according to claim 4, wherein the second end of each of the plurality of shutters extends into the space between the support and the cutter housing.

10. The convertible lawnmower according to claim 1, wherein the cover includes:
a first shutter connected to a roof of the cutter housing adjacent the outer scroll;

a second shutter movable relative to the first shutter and connected to the roof adjacent the outer scroll; the second shutter includes a first abutment and a second abutment; and

5 a third shutter movable relative to the second shutter and connected to the roof adjacent the outer scroll; the third shutter includes a third abutment adjacent;

the third abutment engages the first abutment when the cover moves toward the full mulching position and the third abutment engages the second abutment when the cover moves toward the full bagging position; and

10 the fin extends from the third shutter.

11. The convertible lawnmower according to claim 10, wherein each of the plurality of shutters sequentially overlies one another as the cover moves from the full mulching position to the full bagging position.

12. The convertible lawnmower according to claim 3, wherein the fin lies intermediate the cutting plane and the discharge opening.

13. The convertible lawnmower according to claim 1, further comprising a ramp secured in the cutter housing proximate to the cover.

14. A lawnmower convertible between a bagging mode and a mulching mode, the convertible lawnmower comprising:

a cutter housing having a discharge opening;

an engine mount centrally positioned on the cutter housing;

5 a prime mover supported on the engine mount;

a rotary mulching blade coupled to the prime mover to rotate in a blade circle about a rotation axis within the cutter housing;

a cover movably mounted within the cutter housing in a plane parallel to the blade circle and between a full bagging position where the discharge opening is unobstructed by the cover and a full mulching position where the cover obstructs the discharge opening and at least one position intermediate the full bagging position and the full mulching position where the cover partially obstructs the discharge opening;

a fin extending from the cover toward the blade circle; and

15 a handle connected to the cover and extending external to the cutter housing, the handle is displaceable between a first position, a second position and at least one position intermediate the first position and the second position such that displacement of the handle between each of the first position, the second position and the at least one intermediate position of the handle moves the cover between each of the full bagging position, the full mulching position and the at least one intermediate position of the cover, respectively.

15. The convertible lawnmower according to claim 14, wherein the handle selectively positions the cover and the fin in one of an infinite number of positions between the full bagging position and the full mulching position.

16. The convertible lawnmower according to claim 14, further comprises:

a first gear connected to the handle; and

a second gear connected to the cover and engaging the first gear.

17. A lawnmower convertible between a bagging mode and a mulching mode, the convertible lawnmower comprising:

a cutter housing having a discharge opening;

an engine mount on the cutter housing;

5 a prime mover supported on the engine mount;

a mulching blade coupled to the prime mover to rotate within the cutter housing;

a cover that slides within the cutter housing between a full bagging position where the discharge opening is substantially unobstructed by the cover and a full mulching position where the cover substantially obstructs the discharge opening;

10 a rotary knob operatively connected to the cover; and

indicia adjacent the rotary knob indicating the operational state of the cover based on the position of the rotary knob relative to the indicia.

18. The convertible lawnmower according to claim 17, wherein the rotary knob includes:

a circular base; and

an elongated grip extending from the circular base, the width of the elongated grip being less than one-half of the diameter of the circular base;

19. The convertible lawnmower according to claim 18, further comprising an actuation transmission having a first end connected to the rotary knob and a second end connected to the cover.

20. The convertible lawnmower according to claim 19, wherein the actuation transmission further includes:

- a shaft having a first end connected to the knob and a second end;
- a first gear connected to the cover at the second end of the actuation transmission; and
- a second gear at the second end of the shaft and engaging the first gear.

21. A lawnmower convertible between a bagging mode and a mulching mode, the convertible lawnmower comprising:

- a cutter housing having a discharge opening;

- a rotary mulching blade mounted to rotate in a cutting plane about a rotation axis within

5 the cutter housing; and

- a cover pivotable within the cutter housing, the cover projecting an area onto the cutting plane at a location where the cover overlaps the cutting plane and the projected area changes in size as the cover moves between a full bagging position where the discharge opening is unobstructed by the cover and a full mulching position where the cover obstructs the discharge

10 opening.

22. The convertible lawnmower according to claim 21, wherein the cover has surface that extends parallel to the cutting plane; and

- the cover surface includes an area that changes in size as the cover moves between the full bagging position and the full mulching position.

23. The convertible lawnmower according to claim 22, wherein the projected area is at most approximately equal to the area of the cover surface at each position between the full bagging position and the full mulching position.

24. The convertible lawnmower according to claim 23, wherein the area of the cover surface and the projected area have a minimum size when the cover is in the full bagging position and a maximum size greater than the minimum size when the cover is in the full mulching position.